

REMARKS/ARGUMENTS

Claims 1, 3-6, and 9-23 are pending in the present application. Claims 1, 3, 11, 16, 22, and 23 are independent. Applicant respectfully traverses the rejection of the pending claims.

Non-Statutory Subject Matter - 35 U.S.C. § 101

A. The Rejection

Claims 1, 3-6, 9-15, and 18-21 were rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter. In the Office Action dated July 13, 2005, it is stated, "The invention as recited in the claims is merely an abstract idea that is not within the technological arts."

B. The "Technological Arts" Test

Applicant respectfully traverses the rejection in view of the Board's recent opinion, *Ex Parte Lundgren*, BPAI, No. 2003-2088, 9/28/05. The Board essentially held that the test for patentable subject matter under 35 U.S.C. §101 does not include a separate "technological arts" test. In other words, *Ex Parte Lundgren* has abolished the "technological arts" test as a basis for determining statutory subject matter.

Notwithstanding the abolishment of the "technological arts" test, it is respectfully submitted that the claimed method meets the requirements of the "technological arts" test. All the presently rejected method claims require the generation of a random binary

waveform, the use of a physical noise source, the derivation of signals containing events, etc. These steps and functions are clearly technological features that provide useful, concrete and tangible results.

C. Useful, Concrete, Tangible Results

The Applicant submits that the proper test of whether the claimed invention is statutory subject matter should be whether the claimed process provides useful, concrete and tangible results. The Federal Circuit has held that a process claim that applies a mathematical algorithm to "produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle, on its face comfortably falls within the scope of § 101," AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 1358, 50 USPQ2d 1447, 1452 (Fed. Cir. 1999).

The Office Action states that the claimed invention does not produce a "useful, concrete and tangible" result, because they are "not limited to tangible embodiments". It should be noted that the Office Action has not raised this objection against the apparatus claims 16, 17, 22 and 23, which also relate to the generation of random binary waveforms. Accordingly, there is an admission that the apparatus claims are related to statutory subject-matter. Moreover, it is not logical to object to the method claims, since a mere change of category from "apparatus" to "method" does not change the type of subject-matter covered. Lastly, Applicant disagrees with the Examiner's objection that waveforms are "intangible", because they are measurable physical

phenomena. The Applicant, therefore, respectfully submits that the claimed method provides useful, concrete and tangible results.

D. Abstract Ideas

In addition to alleging the lack of useful, concrete and tangible results, the Office Action appears to suggest that the claimed method is merely an “abstract idea” which is a judicially recognized exception to 35 U.S.C. § 101. The Applicant, however, respectfully disagrees that the claimed invention is an “abstract idea”. The claimed method does not merely manipulate an abstract idea or solves a purely mathematical problem without any limitation to a practical application. If this was the case then there might be an argument that the invention is non-statutory subject matter. Instead the claimed invention is directed to a method and apparatus for generating a random noise waveform from a physical noise source. In other words, the claimed invention has the practical application of generating random binary waveforms from a physical noise source, and it is well known in the art that random binary waveforms are required for use in radar and communications systems. Moreover, the random binary waveforms that are generated according to the claimed method do not preempt the use of a particular mathematical algorithm. Since the claimed method does not simply manipulate an abstract idea nor solve a mathematical problem without a practical application, the claimed method is directed to statutory subject matter.

For all of these reasons, Applicant respectfully submits that claims 1, 3-6, 9-15, and 18-21 are directed to statutory subject matter, and the Examiner is respectfully requested to withdraw the rejection of the method claims under 35 U.S.C. § 101 as being directed to non-statutory subject matter.

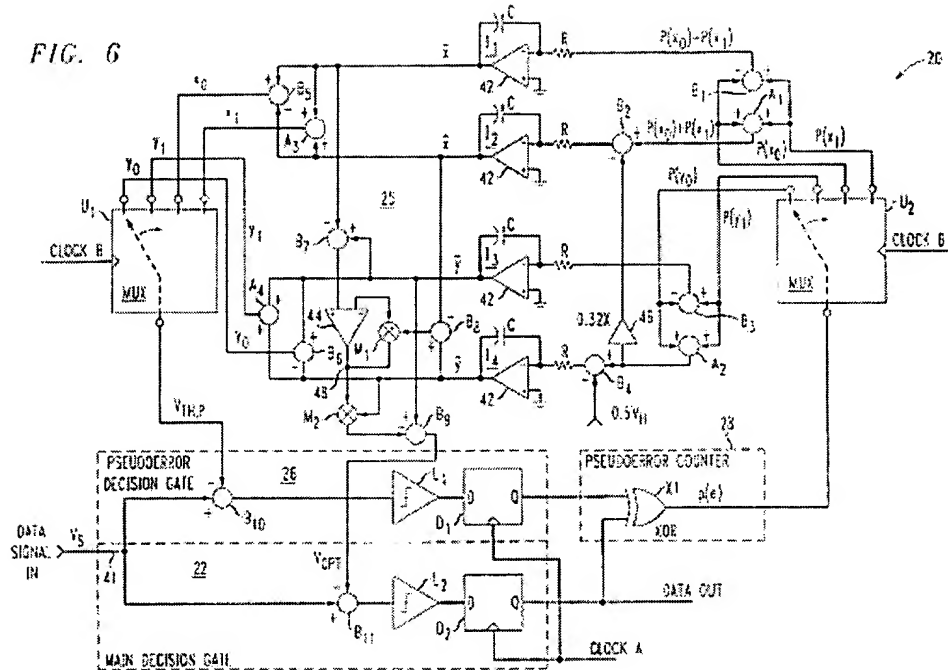
Claim Rejection – 35 U.S.C. § 103

A. The Rejection

Claims 22 and 23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over US Patent 6,275,959 B1 ("Ransijn") in view of Applicant's Admitted Prior Art (AAPA). Applicant respectfully traverses the rejection of claims 22 and 23.

B. The Ransign Patent

Fig. 6 of Ransijn discloses a circuit which receives input data and compares this with a threshold. For the convenience of the Examiner, Fig. 6 is reproduced below:



More specifically, input data is compared with one threshold level (gate B₁₁) in order to generate a data output, and successively with multiple different threshold levels (gate B₁₀) to generate a bit stream which is compared (gate X1) with the data output.

Contrary to the allegations in the Office Action:

(a) Ransijn does not teach an apparatus for generating a random binary waveform – the output waveform is correlated with the non-random data at the input.

(b) The waveform generated by the Ransijn apparatus does not contain events occurring at random intervals. The events occur at regular, clocked intervals.

(c) Although the gate X1 acts to multiply first and second signals at its input, neither of those input signals contains events occurring asynchronously at random intervals. See the clocked flip-flops D1 and D2, which will result in synchronous outputs.

The purpose of the "multiplying" operation of the present invention is to intersperse the events contained in the respective input signals - this cannot happen in Ransijn because the events occur simultaneously.

Finally, the Examiner argues that it would be obvious to use a physical noise at the input of the Ransijn circuit. This cannot be correct. The entire purpose of the Ransijn circuit is to reconstitute data appearing at its input; the circuit would be purposeless if only random noise were present at the input (and of course threshold optimization - the subject of Ransijn's invention - could not occur with a noise-like input).

C. The Ransijn Patent Fails to Teach the Alleged Claim Limitations

Applicants respectfully submit that the cited prior art Ransijn patent fails to teach all the claim limitations of (a), (b) and (c) described above and which appear in independent claims 1, 3, 11, 16, 22, and 23. The Office Action alleges that the Ransijn discloses the claimed structure and function. The Applicants respectfully disagree for the reasons stated above.

The Examiner has cited Ransijn against claim 23 which further recites delay means. The Office Action, however, does identify the structure in Ransijn that corresponds to the claimed delay means. Accordingly, the Applicant respectfully submits that Ransijn does not disclose the claimed delay means of claim 23.

Accordingly, the combination of cited prior art references fails to disclose every claim limitation of the independent claims, and the Examiner is respectfully requested to withdraw the rejection of claims 1, 3, 11, 16, 22, and 23 based 35 U.S.C. § 103(a).

Conclusion


In view of the above amendment, Applicant believes the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Richard J. McGrath (Reg. No. 29,195) at the telephone number of (703) 205-8000, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By  739,491
Michael K. Mutter
Registration No.: 29,680
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorneys for Applicant